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June 8, 2009

MEMORANDUM
TO: Ann Bishop and EEU List
From: Vermont Fuel Dealers Association— Matt Cota

Comments on how cost-effectiveness screening is currently performed, and on what costs and benefits should be considered in the future when determining cost effectiveness screening for heating and process-fuel efficiency.

The deliverable heating fuel industry has a multi-pronged effort to improve efficiency in the home. Certified heating technicians (from both fuel and non-fuel companies) are trained to evaluate equipment in the home and its fuel consumption.

There are many variables when deciding whether to upgrade or replace a heating appliance, including age, combustion performance and the equipment configuration. The savings delivered by certified heating technicians are well documented by the Propane Education Research Council[1] (PERC), the National Oilheat Research Alliance[2] (NORA) and the Brookhaven National Laboratory.[3] A simple "clean and tune" can save up to 6%. Replacing a tankless water heater can save 10%, while replacing a non-flame retention burner with a flame retention burner can save 15%. A new boiler or furnace, can reduce consumption by 30 to 40%.

NORA and Brookhaven have developed analysis tools to assist certified technicians in the field. One of these tools is the Fuel Savings Analysis (FSA) Calculator. If a customer is considering upgrading or replacing a heating system, vital information on the unit is collected and put into the FSA Calculator. Alternative equipment and configurations are also analyzed.

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[1] www.propanecouncil.org

[2] www.intelligentwarmth.com

[3] www.bnl.gov

If the equipment is not old or should not be replaced, less expensive alternative scenarios are encouraged such as a 'clean and tune' or a burner replacement. In some cases replacing the controls on the unit and using outdoor reset may be effective in reducing consumption.

A sample efficiency screening using the NORA Fuel Savings Analysis Calculator is shown on the following four pages. This is one of several tools used by certified heating technicians. The NORA calculator and other similar analysis tools were developed by Dr. Tom Butcher at the Brookhaven National Laboratory.[4] Other excel based calculators (such as Home Analysis Plus) are based on the methodology and test results established at Brookhaven. Some heating system manufacturers such as Energy Kinetics also offer their own cost savings analysis tool.

It is important to note that all work conducted on heating systems must be done according to the Vermont Fire and Building Code. On June 15, 2009, the Vermont Fire Code will be updated with a number of provisions that impact heating fuel technicians.

- All boiler and pressure vessels are required to meet ASME standards.
- All fuel fired heating appliances shall be cleaned, maintained and inspected at least once every two years by a state certified technician. At the time of inspection, the name and the certificate number of the person who performed the inspection must be marked on the appliance.
- The installation, inspection and service of gas appliances are required to be performed by a person with an LP Gas CETP certification. Propane certified technicians are now required to take Book 4.1 in addition to Book 1, 4.2, 6 and 7.
- The installation, inspection and service of oil burning equipment must have a Vermont oilheat certificate of fitness— or a current NORA Silver or NORA Gold Certificate.

VFDA represents companies in the business of keeping Vermonters warm. VFDA members sell propane, heating oil, BioHeat®, diesel, biodiesel, gasoline, kerosene and wood pellets. VFDA also represents non-fuel companies that sell and service heating equipment. The Vermont Fuel Education Center (operated by VFDA) is the state's leading provider of education and training to both fuel and non-fuel companies that sell, install and service oil and propane heating systems. VFDA's education curriculum is recognized nationally and is required for heating technicians working in Vermont.

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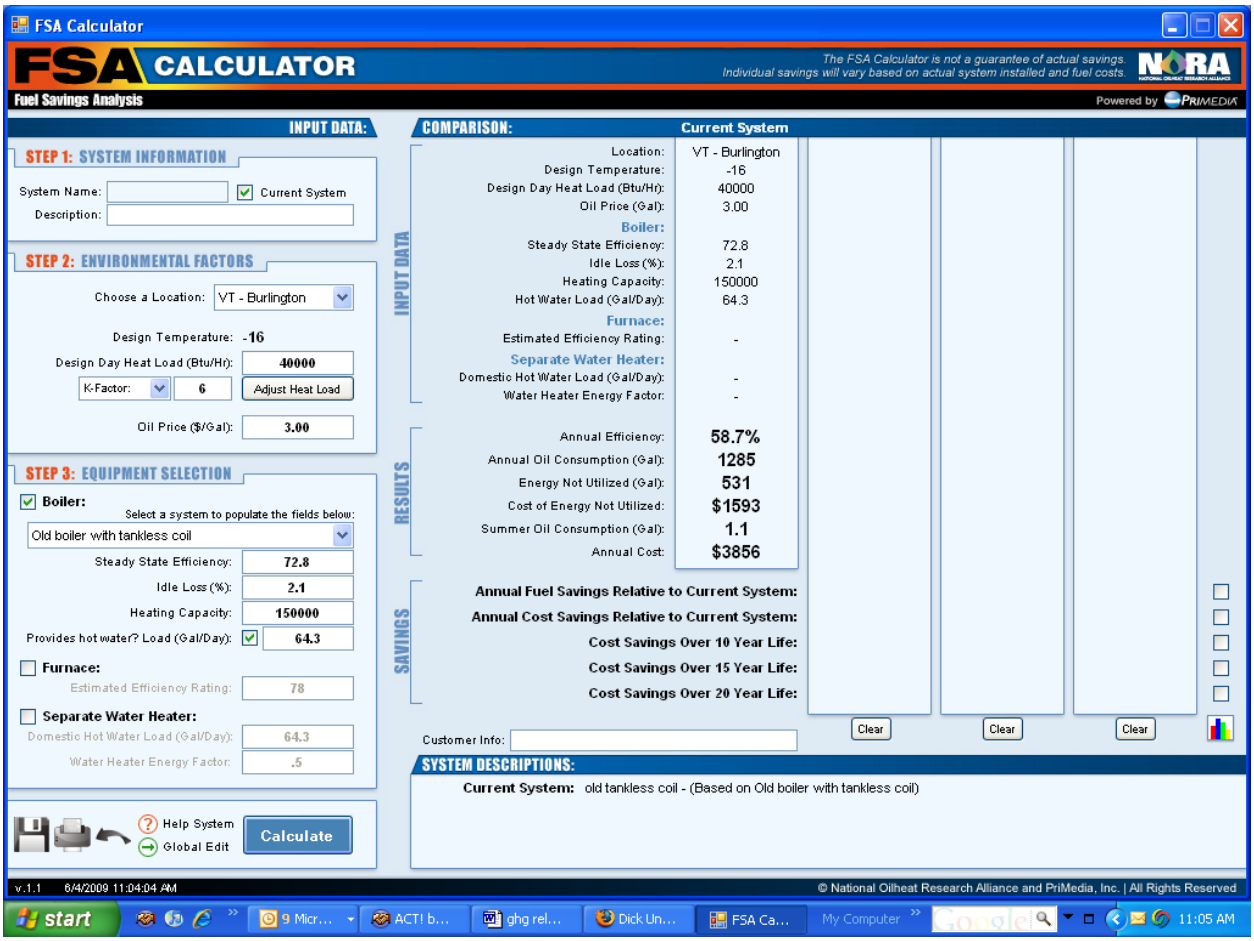
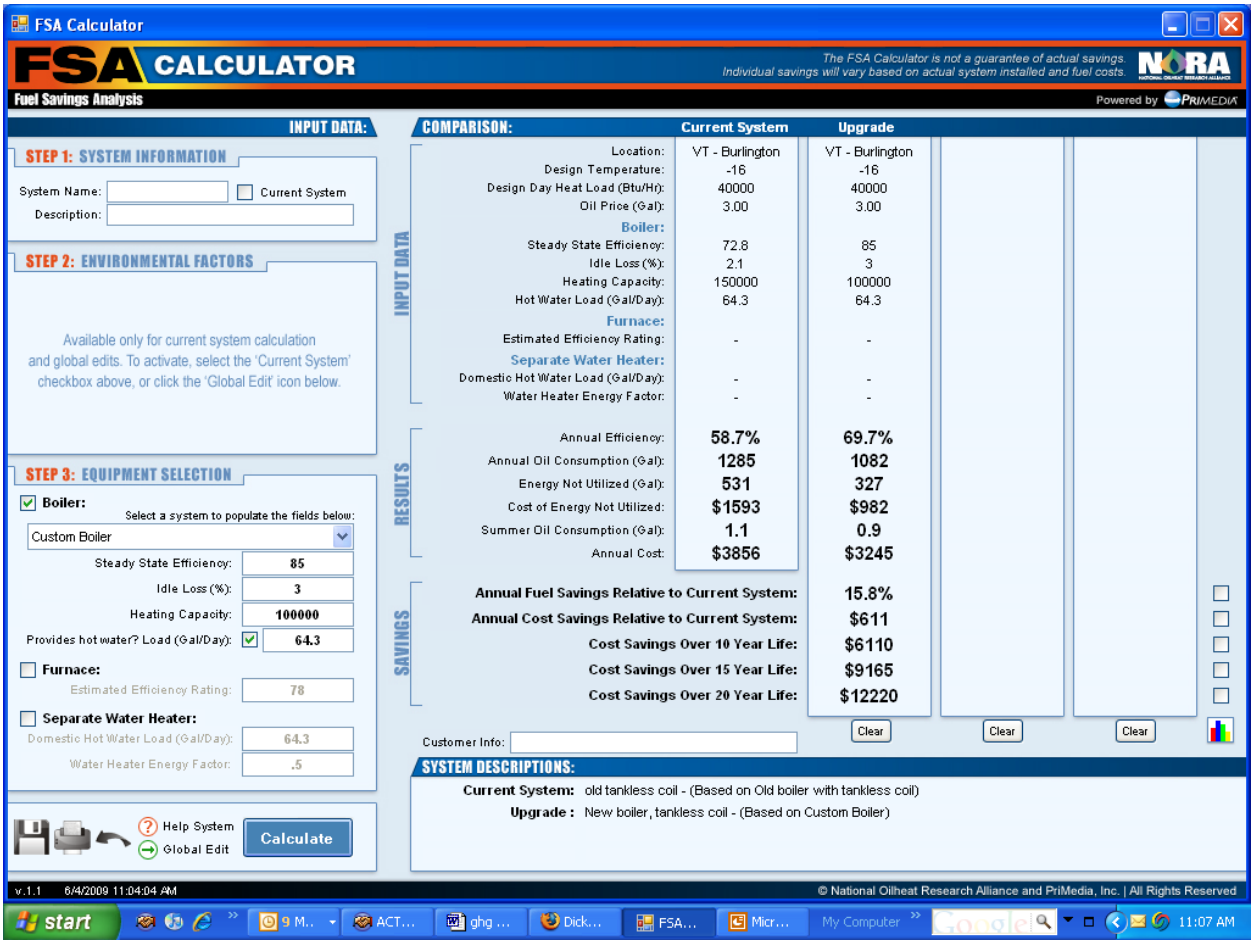
[4] www.bnl.gov

The Fuel Savings Analysis (FSA) calculator is one of several examples of how NORA certified heating technicians conduct cost effectiveness screenings.



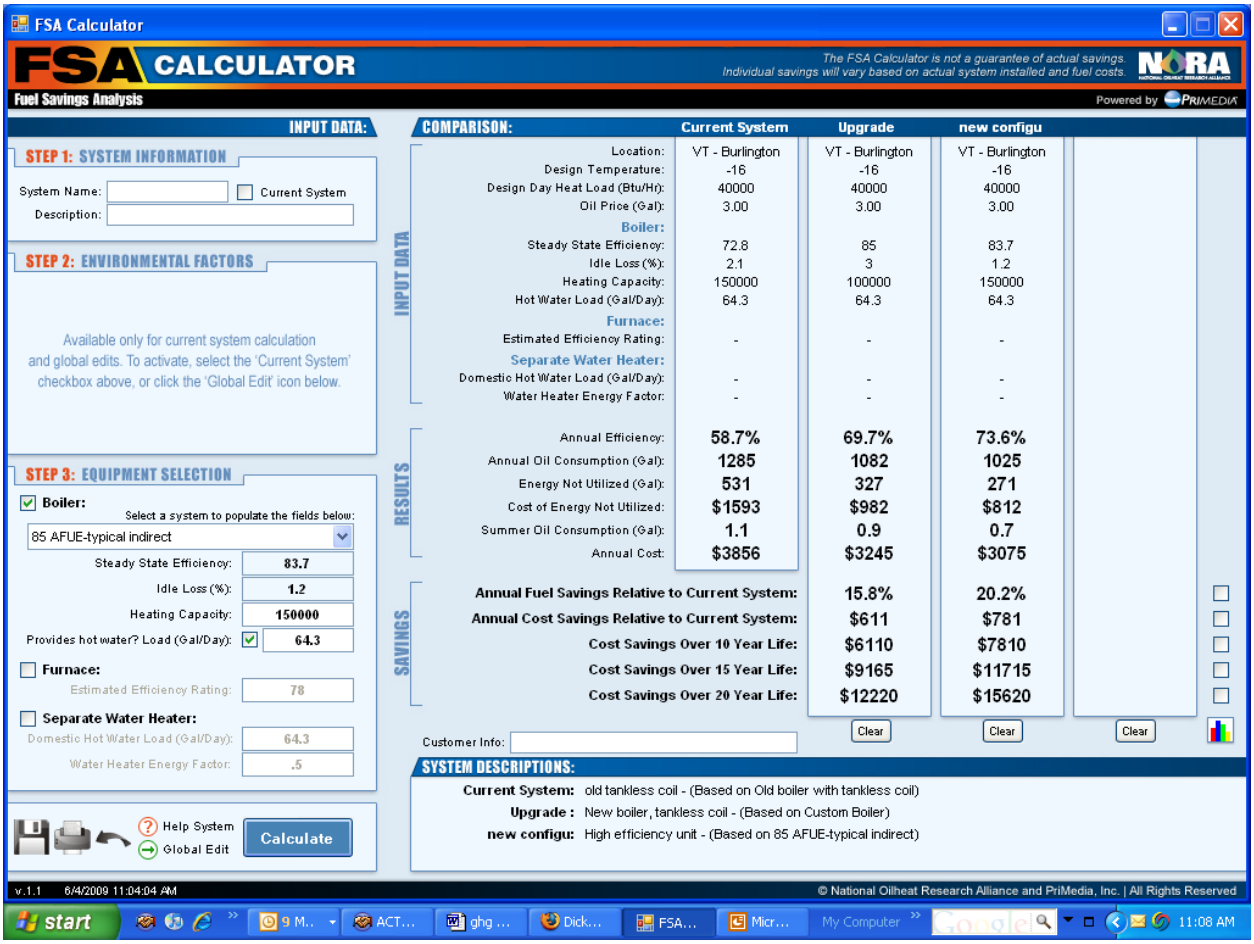
In this Burlington home, the technician calculates degree day heat load, K factor and the price of oil. The existing equipment is then entered.

The fuel savings calculator analyzes the current system efficiency and then compares it to a variety of measures.



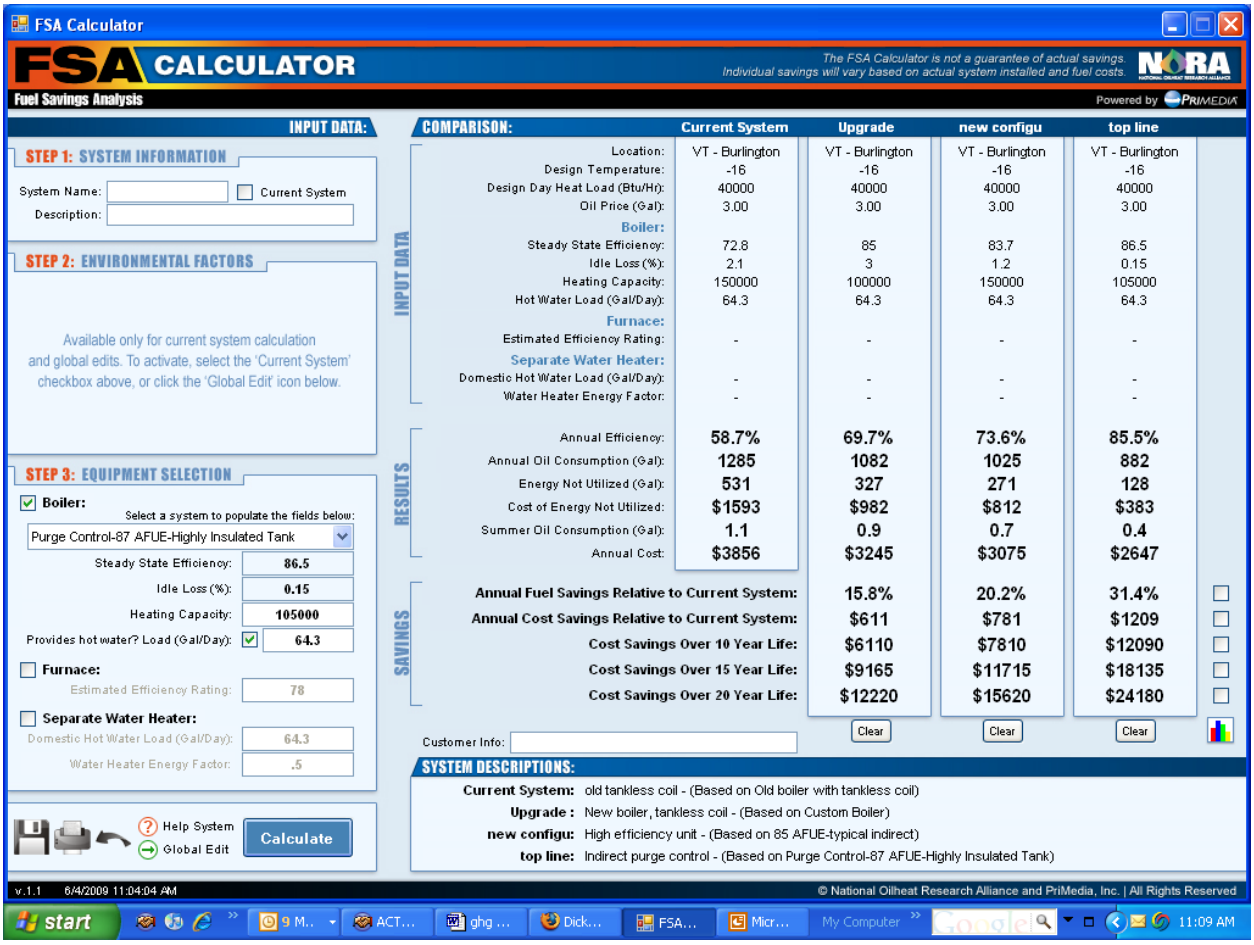
In this example, the heating appliance is upgraded, but the configuration hasn't changed. There is an increase in annual efficiency and the same home will use approximately 200 fewer gallons. Based on $3 a gallon fuel, the annual savings is over $600. The calculator then shows the cost savings over 10, 15 and 20 years.

The FSA Calculator gives the homeowners several options to consider.



Under this new configuration, a high efficiency unit boiler is installed with new indirect water heating. This system shows an even greater savings.

In the last column, the FSA Calculator shows the top of the line heating system replacement, a purge control 87% efficiency with a highly insulated tank. Consumption decreases by nearly a third.



The FSA Calculator shows savings in both dollars and gallons, providing homeowners with the tools to determine whether upgrading or replacing heating equipment is a good investment.